UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,052	09/23/2003	Changwen Liu	42P15811	4753

8791 7590 04/13/2007	EXAMINER
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ART UNIT	PAPER NUMBER
2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

Office Action Summary	Application No.	Applicant(s)
	10/670,052	LIU, CHANGWEN
	Examiner	Art Unit
	Gary Mui	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _23 September 2003_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-61_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-7, 13-16, 18-21, 25-32, 38-41, 43-46 and 51-61_ is/are rejected.

7)☒ Claim(s) _8-12, 17, 22-24, 33-37, 42 and 47-50_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _23 September 2003_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413).
   Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Drawings

1.   Figures 2 and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2.   The drawings are objected to because in figure 8 box 893 the occurrence of "dis-joint pahts" seems to be a typo, it is suggested to change "dis-joint pahts" to --dis-joint paths--. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

be notified and informed of any required corrective action in the next Office action. The

objection to the drawings will not be held in abeyance.

3.   In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is

required to submit a marked-up copy of each Replacement Sheet including annotations

indicating the changes made to the previous version. The marked-up copy must be clearly

labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that

explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the

proposed drawing and marked-up copy will result in the abandonment of the application.

Claim Objections

4.   Claims 1 – 61 are objected to under 37 CFR 1.75 because of the following informalities:

For claim 1 lines 5, the occurrence of "a source node" and "a target node" seems to refer back

to "a source node" and "a target node" previously recited, if this is true, it is suggested to the

applicant to change "a source node" and "a target node" to --the source node-- and --the target

node--, respectively. Similar problem exists for claim 26.

For claim 2 line 2, the occurrence of "the Dynamic Source Routing protocol" should be

change to --a Dynamic Source Routing protocol--. Similar problem exits for claim 27.

For claim 3 line 2, the occurrence of "a Generic Route Discovery Procedure" seems to refer

back to "a Generic Route Discovery Procedure" previously recited in claim 2, if this is true, it

is suggested to the applicant to change "a Generic Route Discovery Procedure" to --the

Generic Route Discovery Procedure--. Similar problem exists for claim 17, 28, and 42.

For claim 7 line 1, the occurrence of "a merged path" seems to refer to "a merged path" previously recited in claim 1, if this is true, it is suggested to the applicant to change "a merged path" to --the merged path--. Similar problem exists for claim 10, 21, 22, 32, 35, 45, and 47.

For claim 11 line 1, the occurrence of "a third and a fourth node-disjoint directed paths" seems to refer back to "a third and a fourth node-disjoint directed paths" previously recited in claim 1, if this is true, it is suggested to the applicant to change "a third and a fourth node-disjoin paths" to --the third and the fourth node-disjoint directed paths--. Similar problem exists for claim 12, 36, and 37.

For claim 14, the occurrence of "a wireless signal" (line 4) and "a first plurality of paths" (line 5) seems to refer back to "a wireless signal" and "a first plurality of paths" previously recited, it this is true, it is suggested to the applicant o change "a wireless signal " and "a first plurality of paths" should be change to --the wireless signal-- and --the first plurality of paths--, respectively. Similar problem exists for claim 39.

For claim 17, it is suggested to the applicant to change "the first path" (line 2) and "the second path" (line 4) to --a first path-- and --a second path--, respectively.

For claim 18, it is suggested to the applicant to change "the second path" (line 1), "the first directed path" (line 4) and ""the second directed path" (line 7) to --a second path--, --a first directed path--, and --a second directed path--, respectively.

For claim 20 line 3, the occurrence of "a second plurality of paths" seems to refer back to "a second plurality of paths" previously recited in claim 14, if this is true, it is suggested to the applicant to change "a second plurality of paths" to --the second plurality of paths--.

For claim 25 line 2, the occurrence of "a target node" seems to refer back to "a target node" previously recited in claim 14, if this is true, it is suggested to the applicant to change "a target node" to --the target node--. Similar problem exists for claim 39 and 50.

For claim 52 line 8, the occurrence of "a route reply" seems to refer back to "a route reply" previously recited, it this is true, it is suggested to the applicant to change "a route reply" to --the route reply--. Similar problem exists for claim 53.

For claim 53 line 5, the occurrence of "a route request" seems to refer back to "a route request" previously recited, if this is true, it is suggested to the applicant to change "a route request" to --the route request--.

For claim 60 line 4, the occurrence of "id" seems to be a typo, it is suggested to the applicant to change "id" to --is--.

Claims 4 – 6, 8, 9, 13, 15, 16, 19, 23, 24, 27, 29 – 31, 33, 34, 38, 40, 41, 43, 44, 46, 48, 49, 51, 54 – 59, and 61 are objected to because they depend on an objected claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6.   Claims 54 and 58 – 61 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claim 54 line 6, the occurrence of "repeating the method of claim 53" is vague and indefinite because it is not known the metes and bounds of the claimed invention. It is unclear if the applicant parts or all of the methods of the previous claim.

For claim 58 line 4, the occurrence of "repeating the method" is vague and indefinite because it is not known the metes and bounds of the claimed invention. It is unclear which method the applicant is referring to.

Claim 59 – 61 are rejected to because they depend on a rejected claim.

Claim Rejections - 35 USC § 101

7.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8.   Claims 26 – 38 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

For claims 26 – 38, the claims are directed to an article, an article is a computer program per se, which is non-statutory subject matter. The claim recites a storage medium having a plurality of machine accessible instructions; a storage medium which is not a "computer readable medium" and which is not stored with, embodied with, or encoded with, "computer executable instructions" cannot carry out the functionality of the claimed invention.

Note

9.   For claims 15 – 20, 22 – 25, 40 – 45, and 47 – 52, the phase "capable of" is not a positive

claim limitation. Therefore, the limitation following the phrase is not considered the claimed

invention. It is suggested to the applicant to remove the phrase.

Claim Rejections - 35 USC § 102

10.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11.   Claims 1 – 3, 7, 26 – 28, and 32 are rejected under 35 U.S.C. 102(e) as being anticipated

by Schollmeier et al. (US 2006/0221834 A1).

For claims 1 and 26, Schollmeier et al. teaches establishing a first directed path, having

direction based path segments, from a source node to a target node; establishing a second

directed path, having direction based path segments, from a source node to a target node;

merging the first and second directed paths into a merged path; and dividing the merged path

into a third and a fourth node-disjoint directed paths between the source node and the target

node (see paragraphs 0004 and 0005, Schollmeier et al. teaches finding multiple paths from

the source to target node, in which he groups them up to from a set of paths).

For claims 2, 3, 27, and 28, Schollmeier et al. teaches establishing the first directed path

includes utilizing either a Generic Route Discovery Procedure or the Dynamic Source

Routing protocol and establishing the second directed path includes utilizing a Generic Route

Discovery Procedure (see paragraph 0015 lines 1 – 8).

For claims 7 and 32, Schollmeier et al. teaches adding the first directed path to the second

directed path in such a manner that the direction based path segments of opposite direction are

removed from the merged path (see paragraph 0016 lines 1 – 10, the creation of the paths are

disjunct from one another other paths are not part of the hammock set).

Claim Rejections - 35 USC § 102

12.   Claims 14 – 16, 18, 19, 25, 39 – 41, 43, 44, 51 – 53 and 55 – 57 are rejected under 35

U.S.C. 102(e) as being anticipated by Sahinoglu et al. (US 2005/0036486 A1).

For claim 14, Sahinoglu et al. teaches a transceiver to transmit and receive a wireless signal; a

path generator to establish at least a first plurality of paths of communication, utilizing at least

in part a wireless signal, between the source node and a target node; a path organizer to

arrange a first plurality of paths generated by the path generator into a second plurality of

paths that are node disjoint (see paragraphs 0008, 0009, 0010, and 0011, the source node

generates route request packets to send to the destination and receives a route reply packet

from the destination in which the source will make calculations on the multiple routes in the

reply message).

For claim 15, Sahinoglu et al. teaches the path generator is capable of generating a first

directed path and a second directed path, each directed path having direction based path

segment (see paragraph 0011, multiple paths are generated directed towards the destination).

For claim 16, Sahinoglu et al. teaches the path generator is capable of generating a path utilizing a Generic Route Discovery Procedure (see paragraphs 0008 and 0009, route is generated by sending out a data packet to find the route).

For claim 18, Sahinoglu et al. teaches the path generator is capable of generating the second path via: broadcasting a route request (see paragraph 0038 lines 1 – 2); broadcasting information about the first directed path with the route request; directing receiving nodes to forward the route request via receiving nodes until the request is received by the target node; directing receiving nodes to build the second directed path having path segments utilizing the path segments that the route request has traveled; and directing receiving nodes to prevent the second directed path from including directed paths segments found in the first directed path (see paragraph 0039, a second path is found where is can be at a lower cost then the first path).

For claim 19, Sahinoglu et al. teaches establishing the first and second paths substantially simultaneously (see paragraph 0038 lines 6 – 9 and 0039 lines 1 – 4, the broadcasted route request messages (RREQ) arrives at the destination and will send out a route reply (RREP) for each RREQ)

For claim 25, Sahinoglu et al. teaches the transceiver is capable of sending a wireless signal to a target node utilizing any one of the paths of the second plurality of paths that are node disjoint (see paragraph 0011 lines 2 – 4; the best route is selected for sending a signal).

For claim 39, Sahinoglu et al. teaches a target node (see figure 1 box 102), at least one repeater node (see figure 1 labels A – F), a source node including: a transceiver to transmit and receive a wireless signal; a path generator to establish at least a first plurality of paths of

communication, utilizing at least in part a wireless signal, between the source node and a target node; a path organizer to arrange a first plurality of paths generated by the path generator into a second plurality of paths that are node disjoint (see paragraphs 0008, 0009, 0010, and 0011, the source node generates route request packets to send to the destination and receives a route reply packet from the destination in which the source will make calculations on the multiple routes in the reply message).

For claim 40, Sahinoglu et al. teaches the path generator is capable of generating a first directed path and a second directed path, each directed path having direction based path segment (see paragraph 0011, multiple paths are generated directed towards the destination).

For claim 41, Sahinoglu et al. teaches the path generator is capable of generating a path utilizing a Generic Route Discovery Procedure (see paragraphs 0008 and 0009, route is generated by sending out a data packet to find the route).

For claim 43, Sahinoglu et al. teaches the path generator is capable of generating the second path via: broadcasting a route request (see paragraph 0038 lines 1 – 2); broadcasting information about the first directed path with the route request; directing receiving nodes to forward the route request via receiving nodes until the request is received by the target node; directing receiving nodes to build the second directed path having path segments utilizing the path segments that the route request has traveled; and directing receiving nodes to prevent the second directed path from including directed paths segments found in the first directed path (see paragraph 0039, a second path is found where it can be at a lower cost then the first path).

For claim 44, Sahinoglu et al. teaches establishing the first and second paths substantially simultaneously (see paragraph 0038 lines 6 – 9 and 0039 lines 1 – 4, the broadcasted route

request messages (RREQ) arrives at the destination and will send out a route reply (RREP) for each RREQ).

For claim 51, Sahinoglu et al. teaches the path generator is capable of generating the second path via: broadcasting a route request (see paragraph 0038 lines 1 – 2), and broadcasting information about the first directed path with the route request; the at least one repeater node is capable of forwarding the route request, via other repeater nodes if any, until the request is received by the target node, building the second directed path having path segments utilizing the path segments that the route request has traveled, and determining if the most recent directed path segment is found in either the first directed path or the second directed path, if so, ignoring the routing request, and if not, placing the most recent path segment in the second directed path (see paragraph 0039, a second path is found where it can be at a lower cot then the first path, the path is found by routing through intermediate nodes).

For claim 52, Sahinoglu et al. teaches the target node is capable of: receiving the route request, and transmitting a route reply, having the second directed path (see paragraph 0039 lines 1 – 4), to the source node; and the source node is capable of: receiving the route reply, having a received path, determining if a route reply correlating to the route request has already been received; if so, ignoring the route reply, and if not, utilizing the received path as the second directed path (see paragraph 0041 lines 1 – 4).

For claim 53, Sahinoglu et al. teaches broadcasting , from a source node a route request (see paragraph 0038 lines 1 – 2), wherein the route request is utilized to establish a new path to a target node and includes a reference path and an empty route record (see paragraph 0049 lines 1 – 6); a receiving node receiving a route request; determining if the route request should be

ignored; if not, adding the most recent path segment to the route record, and forwarding the route request until it is received by the target node; broadcasting a route replay, having the route record, from the target node to the source node; determining if the route reply should be ignored; if not, utilizing the route record to communicate between the source and target nodes (see paragraph 0039 lines 1 – 12).

For claims 55 and 56, Sahinoglu et al. teaches determining if the receiving node has previously processed this route request; determining if the most recent path segment is part of the reference path; and if either condition is met, ignoring the route request and determining if the receiving node is the target node; an if not rebroadcasting the route request (see paragraph 0038 line 3 – 5, intermediate nodes rebroadcast the request to the target).

For claim 57, Sahinoglu et al. teaches determining if the route reply if the first route reply received as a result of the route request; and if so, ignoring the route reply (see paragraph 0039 lines 1 – 4).

Claim Rejections - 35 USC § 103

13.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14.   The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

15.   Claims 20, 21, 45, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sahinoglu et al. in view of Schollmeier et al.

For claims 20 and 45, Sahinoglu et al. teaches all of the claimed subject matter with the exception of combining the first plurality of paths into a merged path, and dividing the merged path into a second plurality of paths that are node disjoint. Schollmeier et al. from the same field of endeavor teaches for each input to destination network node pair, multipath routing generates a number of transmission paths or routing paths respectively, also referred to as a hammock. The sum of all the transmission paths from all input network nodes to an output network node is referred to as a hammock set. Accordingly for each output network node there is a hammock set (see paragraphs 0004 and 0005). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine and divide the paths as taught by Schollmeier et al. into the route discovery of Sahinoglu et al. The motivation for doing this is with multiple paths the likelihood the packet will reach its destination increases.

For claims 21 and 46, Sahinoglu et al. teaches all of the claimed subject matter with the exception of the first plurality of paths, includes a plurality of directed paths, each directed path having direction based path segments; and wherein the path organizer is capable of combining the first set of paths into a merged path via adding the first set of paths together, such that path segments of opposite directions cancel out. Schollmeier et al. from the same

field of endeavor teaches the network nodes contained in these disjunct transmission paths are

then partially, ideally as completely as possible, directly connected with each other in the

direction of the target network nodes or else corresponding transmission paths established so

that, at least two paths are respectively created in the direction of the target network nodes in

respect of one network node of a disjunct transmission path. The direction of the transmission

path or connection in the direction of the target network nodes is required in order to avoid

routing loops (see paragraph 0016 lines 1 – 10, the creation of the paths are disjunct from one

another other paths are not part of the hammock set).

Claim Rejections - 35 USC § 103

16.   Claims 4 – 6, 13, 29 – 31, and 38 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Schollmeier et al. in view of Sahinoglu et al.

For claims 4 and 29, Schollmeier et al. teaches all of the claimed subject matter with the

exception of broadcasting a route request (see paragraph 0038 lines 1 – 2), broadcasting

information about the first directed path with the route request; forwarding the route request

via receiving nodes until the request is receive by the target node; building the second directed

path having path segments utilizing the path segment that the route request has traveled; and

preventing the second directed path form including directed path segments found in the first

directed path.   Sahinoglu et al. from the same field of endeavor teaches the source node

initiates a route request by broadcasting the RREQ packet (see paragraph 0038 lines 1 – 2).

The result is that the destination node generates and unicast another RREP packet to the

source node whenever it receives a RREQ packet with a yet another lower cost than known

before. The overall effect is that the route discovery generates multiple RREQs packets from the source node to the destination node, and multiple RREP packets from the destination node to the source node, and the source node must perform cost calculations on the multiple RREP packets to determine a RREP route to use for transmitting data packets. Thus, cost calculation in RREQ packets mandates cost calculation in RREP packets for cost effective route discovery (see paragraph 0039). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to discover a route as taught by Sahinoglu et al. route discovery of Schollmeier et al. The motivation for doing this is to have reliable data packet transmission in the case of link or node failures.

For claims 5 and 30, Schollmeier et al. teaches all of the claimed subject matter with the exception of broadcasting an on-demand flooding route request. Sahinoglu et al. form the same field of endeavor teaches the use of AODV (adhoc on-demand distance vector) protocol for route discovery (see paragraph 0032 lines 1 – 10). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to broadcast the route request as taught by Sahinoglu et al. into the route discovery procedure as taught by Schollmeier et al. The motivation for doing this is to be able to effectively transmit packet using the most updated paths.

For claims 6 and 31, Schollmeier et al. teaches all of the claimed subject matter with the exception of establishing the first and second paths substantially simultaneously. Sahinoglu et al. form the same field of endeavor teaches the RREQ packet, with different accrued cost, arrive at the destination node in some unknown order, after experiencing various time delay, depending on the routes the RREQ packets traveled (see paragraphs 0038 lines 6 – 9, the

broadcasted route request messages (RREQ) arrives at the destination and will send out a route reply (RREP) for each RREQ).

For claims 13 and 38, Schollmeier et al. fails to teach that the two-node disjoint paths include both wireless path segment and wired path segments. However, Sahinoglu et al. form the same field of endeavor teaches the route discovery in an ad-hoc network and Schollmeier does teach that the paths are discovered in a packet switched communication network. The packet switch communication network can be a combination network of both wired and wireless networks. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have both wireless and wired path segments in the routing path. The motivation for doing this is to have efficient data packet transmission because some paths are stable and will not be roaming.

Allowable Subject Matter

17.   Claims 8 – 12, 22 – 24, 33 – 37, and 47 – 50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

18.   Claims 54 and 58 – 61 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

For claims 8, 22, 33, and 47, the prior art fails to teach alone or in combination the adding of the paths is based on vector based addition.

For claims 9, 23, 34, and 48, the prior art fails to teach alone or in combination the steps of

determining two paths are between the same nodes but of opposite direction; if so, removing

the segments from the merged path and repeating the steps.

For claims 10 – 12, 24, 35 – 37, 49, and 50, the prior art fails to teach alone or in combination

of forming a polygon, removing the interior paths, and that the exterior path of the polygon is

the merged path.

Conclusion

19.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. Rochberger et al. (US 6,061,736), Jain et al. (US 6,761,746 B1), Wong et al. (US

7,046,634 B2), Billhartz (US 2004/0022224 A1), and Yagyu et al. (US 2005/0243757 A1) are

cited to show determining two node-disjoint paths using on-demand flooding.

20.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Gary Mui whose telephone number is (571) 270-1420. The

examiner can normally be reached on Mon. - Thurs. 9 - 3 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where

this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GM /04·09·2007

RICKY Q. NGO
SUPERVISORY PATENT EXAMINER